REMARKS

Claims 1, 2, 4-8, 10-12 and 14-25 are pending in the present application. Claims 1, 4, 7, 10, 11 and 14-20 have been amended. Claims 3, 9 and 13 have been cancelled. Claims 23-25 are new. No new matter has been added. Claims 1, 2 5-8, 11, 12, 15, 17, and 19 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Publication No. 2003/0156127 ("Kleyman"). Applicant respectfully traverses the rejections and requests reconsideration in view of the amendments to the claims and the following remarks.

§102 Rejections

Claims 1, 2, 5-9, 11-13, 15, 17, and 19 are rejected under 35 U.S.C. §102(e) as being anticipated by Kleyman (2003/0156127). Applicant respectfully traverses the rejection.

Claims 1, 2, 5-6 and 21

Claim 1 recites a computer implemented method that includes translating a first representation of parts or sub-assemblies of a mechanical design assembly into a second, different representation of the parts or sub-assemblies of the mechanical design assembly. The method further includes, thereafter, translating one or more assembly constraints of the mechanical design assembly, where each assembly constraint defines an association between two or more parts or sub-assemblies of the mechanical design assembly. Translating an assembly constraint includes: identifying one or more geometry elements in the first representation that are constrained by the assembly constraint, identifying one or more corresponding geometry elements in the second representation and applying the assembly constraint to the one or more corresponding geometry elements in the second representation.

The applicant respectfully submits that Kleyman does not teach or suggest translating assembly constraints as required by claim 1. Kleyman does something quite different than what is recited in claim 1. Kleyman looks at a translated object and heuristically determines the constraints imposed on the model by the designer. To quote from Kleyman at §0035:

> For example, if the constraint generator observes that, in the translated object, two surfaces are separated by a gap that is very small compared to the overall dimensions of the structure, the constraint generator will assume that an

error has been made in translation and that the two surfaces are meant to be joined. The constraint generator then transmits a signal containing constraint information to a model enhancer that incorporates this information into the translated object.

In Kleyman, a constraint generator determines constraints by looking for errors in the translated object and by making assumptions based on those errors. A "hybrid object" is generated in which the translated object is augmented by information about the constraint relationships determined by the constraint generator looking at the translated object (§0036). The hybrid object is passed to a repair module and adjusted to satisfy the constraints (§0040, 0041).

Accordingly, Kleyman does not translate assembly constraints. Rather, Kleyman translates an object, determines constraints based on the translated object (by looking for errors and making assumptions), and then repairs the translated object. By contrast, claim 1 recites identifying geometry elements in a pre-translation representation that are constrained by the assembly constraint and then identifying corresponding geometry elements in the translated representation. The assembly constraint is then applied to the corresponding geometry elements in the translated representation. The assembly constraint is thereby translated. Kleyman does not identify geometry elements in a pre-translation representation that are constrained by an assembly constraint: Kleyman does not teach or suggest using the pre-translation representation to determine constraint information. Rather, Kleyman looks at the translated object, and particularly looks for errors in the translated object. Thus, there is no translation of an assembly constraint.

Kleyman does not teach or suggest all of the limitations of claim 1, which is therefore in condition for allowance. Claims 2, 5, 6 and 21 depend from claim 1 and are therefore allowable for at least the same reasons.

Claims 7, 8, 10 and 22

Claim 7 recites an article of manufacture including a recordable medium having recorded thereon machine executable programming instructions designed to program a host machine to

enable the host machine, amongst other things, to translate one or more assembly constraints of said assembly, where each assembly constraint defines an association between two or more parts or sub-assemblies of the mechanical design assembly. Translating an assembly constraint includes: identifying one or more geometry elements in the first representation that are constrained by the assembly constraint, identifying one or more corresponding geometry elements in the second representation and applying the assembly constraint to the one or more corresponding geometry elements in the second representation.

For at least the reasons discussed above in reference to claim 1, Kleyman does not teach or suggest translating an assembly constraint, including: identifying one or more geometry elements in the first representation that are constrained by the assembly constraint, identifying one or more corresponding geometry elements in the second representation and applying the assembly constraint to the one or more corresponding geometry elements in the second representation. Accordingly, claim 7 is not anticipated by Kleyman and is in condition for allowance. Claims 8, 10 and 22 depend from claim 7 and are therefore allowable for at least the same reasons.

Claims 11, 12 and 14

Claim 11 recites a storage medium having stored thereon programming instructions and a processor coupled to the storage medium to execute the programming instructions. The programming instructions are operable to cause a processor to translate a first representation of parts or sub-assemblies of a mechanical design assembly into a second, different representation of the parts or sub-assemblies of the mechanical design assembly, and thereafter, translate one or more assembly constraints of said assembly, where each assembly constraint defines an association between two or more parts or sub-assemblies of the mechanical design assembly. Translating an assembly constraint includes: identifying one or more geometry elements in the first representation that are constrained by the assembly constraint, identifying one or more corresponding geometry elements in the second representation and applying the assembly constraint to the one or more corresponding geometry elements in the second representation.

For at least the reasons discussed above in reference to claim 1, Kleyman does not teach or suggest translating an assembly constraint, including: identifying one or more geometry elements in the first representation that are constrained by the assembly constraint, identifying one or more corresponding geometry elements in the second representation and applying the assembly constraint to the one or more corresponding geometry elements in the second representation. Accordingly, claim 11 is not anticipated by Kleyman and is in condition for allowance. Claims 12 and 14 depend from claim 11 and are therefore allowable for at least the same reasons.

Claims 15 and 16

Claim 15 recites a method including determining geometric entities within a plurality of translated representations of sub-assemblies and/or parts of a mechanical design assembly that are corresponding to geometric entities within a plurality of pre-translation representations of the sub-assemblies and/or parts of the mechanical design assembly, where the geometric entities within a plurality of pre-translation representations are constrained by one or more assembly constraints of the mechanical design assembly. Each assembly constraint defines an association between two or more parts or sub-assemblies of the assembly. The method further includes constraining the determined corresponding geometric entities within the translated representations of the sub-assemblies and/or parts to effectively translate said one or more assembly constraints of the mechanical design assembly.

For at least the reasons discussed above in reference to claim 1, Kleyman does not teach or suggest translating an assembly constraint. Particularly, Kleyman does not teach or suggest determining geometric entities in translated representations of sub-assemblies and/or parts of a mechanical design that correspond to constrained geometric entities of pre-translation representations of the sub-assemblies or parts and constraining the determined corresponding geometric entities in the translated representations. Accordingly, claim 15 is not anticipated by Kleyman and is in condition for allowance. Claim 16 depends from claim 15 and is therefore allowable for at least the same reasons.

Claims 17 and 18

Claim 17 recites an article of manufacture including a recordable medium having recorded thereon machine executable programming instructions designed to program a host machined to enable the host machine to determine geometric entities within a plurality of translated representations of sub-assemblies and/or parts of a mechanical design assembly that correspond to geometric entities within a plurality of pre-translation representations of the sub-assemblies and/or parts of the mechanical design assembly, where the geometric entities within a plurality of pre-translation representations are constrained by one or more assembly constraints of the mechanical design assembly. Each assembly constraint defines an association between two or more parts or sub-assemblies of the assembly. The host machine is further enabled to constrain the determined corresponding geometric entities within the translated representations of the sub-assemblies and/or parts to effectively translate said one or more assembly constraints of the mechanical design assembly.

For at least the reasons discussed above in reference to claim 1, Kleyman does not teach or suggest translating an assembly constraint. Particularly, Kleyman does not teach or suggest determining geometric entities in translated representations of sub-assemblies and/or parts of a mechanical design that correspond to constrained geometric entities of pre-translation representations of the sub-assemblies or parts and constraining the determined corresponding geometric entities in the translated representations. Accordingly, claim 17 is not anticipated by Kleyman and is in condition for allowance. Claim 18 depends from claim 17 and is therefore allowable for at least the same reasons.

Claims 19 and 20

Claim 19 recites a computer system including a storage medium having therein a plurality of programming instructions and a processor coupled to the storage medium to execute the program instructions. The instructions are operable to cause the processor to determine geometric entities within a plurality of translated representations of sub-assemblies and/or parts of a mechanical design assembly that correspond to geometric entities within a plurality of pre-translation representations of the sub-assemblies and/or parts of the mechanical design assembly,

where the geometric entities within a plurality of pre-translation representations are constrained by one or more assembly constraints of the mechanical design assembly. Each assembly constraint defines an association between two or more parts or sub-assemblies of the assembly. The instructions are further operable to cause the processor to constrain the determined corresponding geometric entities within the translated representations of the sub-assemblies and/or parts to effectively translate said one or more assembly constraints of the mechanical design assembly.

For at least the reasons discussed above in reference to claim 1, Kleyman does not teach or suggest translating an assembly constraint. Particularly, Kleyman does not teach or suggest determining geometric entities in translated representations of sub-assemblies and/or parts of a mechanical design that correspond to constrained geometric entities of pre-translation representations of the sub-assemblies or parts and constraining the determined corresponding geometric entities in the translated representations. Accordingly, claim 19 is not anticipated by Kleyman and is in condition for allowance. Claim 20 depends from claim 19 and is therefore allowable for at least the same reasons.

Allowable Subject Matter

Applicant thanks the Examiner for indicating that claims 4, 10, 14, 16, 18, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. These claims have been rewritten in independent form and are in condition for allowance.

New Claims

New claims 23, 24 and 25 depend from claims 1, 7 and 11 respectively, and are therefore allowable for at least the reasons stated above in reference to claims 1, 7 and 11.

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Respectfully submitted,

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